

National Multi-sectoral Plan on Antimicrobial Resistance for the Republic of Nauru

2021-2025



Foreword

The Ministry's overall vision is "A Healthy and Peaceful Nation that values and supports human rights and dignity through the provision of quality health care and services." We will remain steadfast to provide and sustain this vision during the National Multi-Sectoral Plan on Antimicrobial Resistance lifetime.

The Government of the Republic of Nauru is dedicated to ratifying high level commitments such as WHO Regional Committee for the Western Pacific in 2014 and subsequent re-commitment at the World Health Assembly in 2015 and United Nations General Assembly in 2016. We have identified the fight against Antimicrobial Resistance as one of the priority agenda from 2021 to 2025. This is more critical than ever with the global fight against the Covid19 pandemic and other emerging diseases. Anti-microbial Resistance (AMR) is real. AMR is now the second medical tsunami to diabetes¹ in our beloved country and threatens the way we look after our people.

The preceding National Health Strategic Plan 2016 – 2020, has set the wheels in motion to improve infrastructure and capacities to respond better to both clinical and public health sector priority needs. These include the rebuilding of a bigger and better RoN hospital, equipped with state of the art innovative equipment such as GeneXpert and Vitek 2 Compact Interphase specifically to strengthen laboratory capacity to identify antibiotic resistance in-country; decentralised services with well-equipped mobile and fixed community clinics; up skilling of all health cadre and community health workers to improve health care services provision and improving supply stability of quality pharmaceuticals. Our Government will continue to improve governance with pro-health legislations and higher health budget appropriations greater than 17% dedicated to better health services interventions and delivery.

We must continue to work as one with all our stakeholders; our communities, our tripartite partners and other ministries; our community-based organisations and our development partners to align to national priorities and cultural factors that shape antimicrobials use, emergence, and transmission of resistance and how to combat. If we do not practice good AMR stewardship, we and future generations will not experience the positive outcomes of antimicrobials that our parents experienced, but succumb to simple infections like before.

I would like to acknowledge the World Health Organisation for taking the lead and support from other external partners, to fight against Antimicrobial Resistance in our lifetime and setting the stage for our future health leaders to follow.

We must work as one – There is No Time to wait: Secure the future from multi-resistant infections.

I take this opportunity to thank all our partners and stakeholders for supporting us over the years and look forward to working together in implementing this plan. I also thank all the staff and encourage us to continue to put in greater care, compassion and commitment into our work to achieve the outcomes in this inaugural National Multi-Sectoral Plan on Antimicrobial Resistance 2021 – 2025.



Hon. Mrs Isabella Iagogo
Minister for Health and Medical Services

¹ Ranked number 2 at 34%. Ten most diabetes prevalent countries, 2015 (Prevalence of diabetes, as % 30-79 years old, 2015, IDF Diabetes Atlas 7th Edition (International Diabetes Federation, 2015)

Acknowledgement

Thanks to Ministry of Health and Medical Services and other relevant stakeholders from other Ministries who commented and gave invaluable assistance on the various drafts of the Republic of Nauru National Action Plan on Antimicrobial Resistance 2021-2025 and their support is gratefully acknowledged: Ministry of Fisheries & Mineral resources, Ministry of Agriculture, Ministry of Commerce, Industry & Environment, IHMS and Taiwan Technical Mission

Thanks also to all participants from various unit/departments of Ministry of Health who attended the AMR Consultation Workshop in 2019. This action plan derived from presentations and interactive discussions during the workshops.

Finally, thanks to WHO for technical support for funding to formulate the Republic of Nauru National Action Plan on Antimicrobial Resistance 2021-2025.

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Acronyms

AMC	Antimicrobial Consumption
AMR	Antimicrobial Resistance
AST	Antibiotic susceptibility testing
CIE	Commerce, Industry and the Environment
CSA	Country situational analysis
EQA	External quality assessment
ETU	Education & Training Unit
FAO	Food and Agriculture Organization of the United Nations
HP	Health Promotion
HPS	Health promoting schools
IEC	Information, Education, and Communication
IPC	Infection prevention and control
M&E	Monitoring & Evaluation
MOE	Ministry of Education
MHMS	Ministry of Health and Medical Services
MTC	Medicines & Therapeutic Committee
M&E	Monitoring and evaluation
NGO	Non-governmental organization
PH	Public Health
PPE	Personal Protective Equipment
QMS	Quality management system
TB	Tuberculosis
TOR	Terms of Reference
TWG	Technical Working Group
TTM	Taiwan Technical Mission
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

1.0 Introduction

The Republic of Nauru is a single rock island, with a central phosphate plateau surrounded by a ring of fertile soil and sandy beaches. It is the world's smallest island nation, covering just 21 km. The island is divided into 14 districts with current estimated population is 10, 600. Nauru has experienced variable population growth rate and now sits at 1.8%. Typical of the region, 56% of the population are under the age of 25 years. Moreover, Nauru's high adult mortality is a result of high levels of Non-Communicable Diseases (NCD), particularly diabetes. The life expectancy at birth for male and female are at 57.5 and 63.2 years.¹ Nauru also hosts a regional processing centre for asylum seekers wishing to enter Australia.

Nauru is an upper middle-income with a Gross Domestic Product (GDP) per capita of US\$ 7, 821. The WHO UHC and SDG 2018 profile reports a low UHC index of 51% with the main challenge faced with NCDs especially diabetes prevention, control and complications such as diabetic infections with use of antimicrobials. Nauru shows good services coverage for infectious disease, immunization for infants and access to improved sanitation. Nauru has low out-of-pocket spending, suggests a low risk of financial hardships.³

The Republic of Nauru Health Strategic 2016-2020 vision of “*A Healthy and Peaceful Nation that values and supports human rights and dignity through the provision of quality health care and services*” should have been included in Section 6.0 under Special Areas of Interest AMR and the One Health Approach. Nevertheless, strategies directly linked to “Healthy Islands Policy;” improving community based health care for diabetes, patients follow up and WASH implementation; monitor standards of food safety; increase immunisation coverage to >95%; continue universal access to quality assured medicines; strengthen integrated surveillance systems; effective monitoring and managing of MDR-TB and HIV/STIs; monitor and evaluate through research global initiatives; and joint services planning to make the health system respond better to a national threat such as AMR.

In 2014, the World Health Organisation (WHO) declared antimicrobial resistance (AMR) as a global health threat that requires urgent collaborative action. High rates of resistance to hospital and community-acquired infections have been reported globally, with some of the highest rates reported in the Western Pacific Region.

Early in 2018, WHO released the first surveillance data on antibiotic resistance that revealed high levels of resistance to a number of bacterial infections in both high and low-income countries. The most commonly reported resistant bacteria were *Escherichia coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, and *Streptococcus pneumoniae*, followed by *Salmonella species*. A costing study estimated economic costs to *Salmonella Typhi* outbreak alone in Nauru restaurants at USD46, 000.

Moreover, a latest report showed the high incidence of community acquired *Methicillin-Resistant Staphylococcus aureus* (MRSA) and Extended-spectrum beta-lactamases (ESBL) infections in Pacific Island Countries and Territories.⁵ In 2015, Nauru was ranked the second most diabetes prevalent country with a burden of 24% in the 20-79 years old cohort.⁶ The UHC and SDG 2018 Country Report stated that Nauru faced

¹ https://pacific.unfpa.org/sites/default/files/pub-pdf/web_140414_UNFPAPopulationandDevelopmentProfiles-PacificSub-RegionExtendedv1LRv2_0.pdf

³ <https://apps.who.int/iris/bitstream/handle/10665/272317/WPR-2018-DHS-014-nru-eng.pdf?sequence=1&isAllowed=y>

⁴ Restaurant-associated outbreak of *Salmonella Typhi* in Nauru: an epidemiological and cost analysis, Olsen et al, *Epidemiology & Infection*, 2002

⁵ Antibiotic Resistance in Pacific Island Countries and Territories: A Systematic Scoping Review, Nicola D Foxlee et al, *Antibiotics*, MDPI, 2019

⁶ *ibid*

challenges in preventing, controlling diabetes and complications such as diabetic infections. Poorly managed diabetic infections can contribute to high MRSA infection rates in both community and hospital settings. As a result, Ministry of Health & Medical Services (MHMS) will endeavour to include Antimicrobial Resistance as one of the priority agenda in the new Health Sector Strategy.

In addition, on May 2015 the Global Action Plan (GAP) on Antimicrobial Resistance was also endorsed at the Sixty-eighth session of the World Health Assembly, where all Member States including the Republic of Nauru committed to developing aligned national plans on antimicrobial resistance within the two years following endorsement. The WHO 2015 GAP² alerts us all to collaborate by sharing resources and information to harmonize our fight against this global health threat under these **five strategic** objectives:

1. To improve awareness and understanding of antimicrobial resistance through effective communication, education and training;
2. To strengthen the knowledge and evidence base through surveillance and research;
3. To reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures;
4. To optimize the use of antimicrobial medicines in human and animal health, and;
5. To develop the economic case for sustainable investment, takes into account needs of all countries and to increase investment in new medicines, diagnostic tools, vaccines & other interventions.

In 2019, Western Pacific Region member states including the Government of the Republic of Nauru (RoN), endorsed the GAP aligned Action Agenda for Antimicrobial Resistance in the Western Pacific Region.³ **Three** identified priority actions (PA) of the Agenda, to provide guidance on the containment of AMR.

- PA 1: Strengthening national plans and raising awareness of AMR across all sectors;
PA 2: Improving surveillance; and,
PA 3: Strengthening the capacity of health systems to contain resistance.

This National Action Plan on Antimicrobial Resistance is supported by the priority actions listed in the Action Agenda for Antimicrobial Resistance in the Western Pacific Region, which was endorsed by the Sixty-fifth session of the Regional Committee for the Western Pacific Region in 2014.

Four main Principles of the National Action Plan

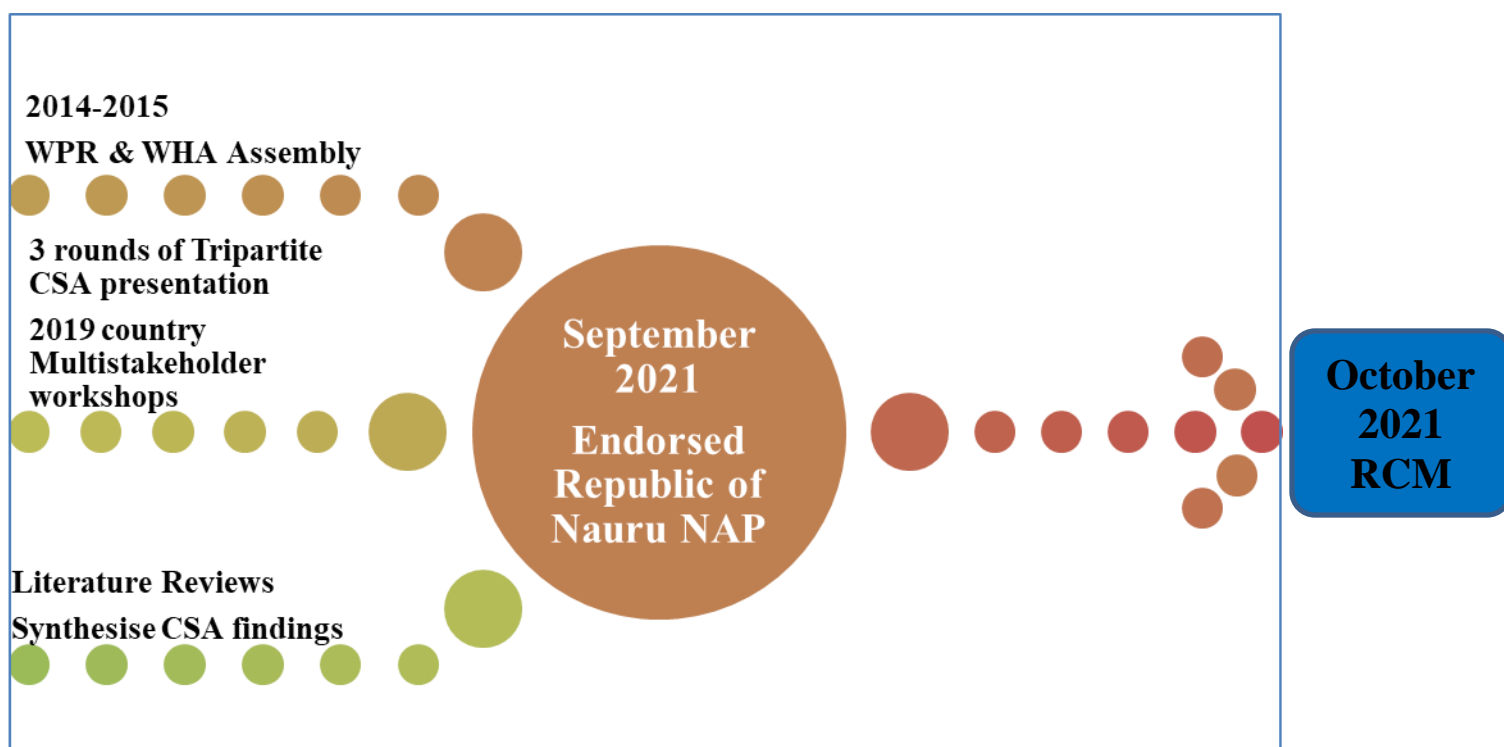
1. **Whole-of-society engagement**
2. **Prevention first**
3. **Access to effective treatment**
4. **Sustainability**

² 2015 WHO Global Action Plan
³ 65th session of the WHO Regional Committee for the Western Pacific in October 2014, aligned to the WHO GAP 2015

2.0 Collaborative Approach - Developing the Plan

A multi-stakeholder consultation workshop was conducted in 2019 with WHO technical support. The Ministry of Health of the Republic of Nauru took lead in this multi-sectoral workshop⁴ and updated the forum on the results of the tripartite AMR country situation analysis (CSA) and presentations from key partners. Findings were discussed and country-specific recommendations and interventions were identified as next steps towards the development of this Plan. It is scheduled for Cabinet endorsement by 30 September 2021 and for presentation at the WHO Regional Country Meeting (RCM) about a month later, as in **figure 1**.

Figure 1 – Collaborative Approach to developing the Plan

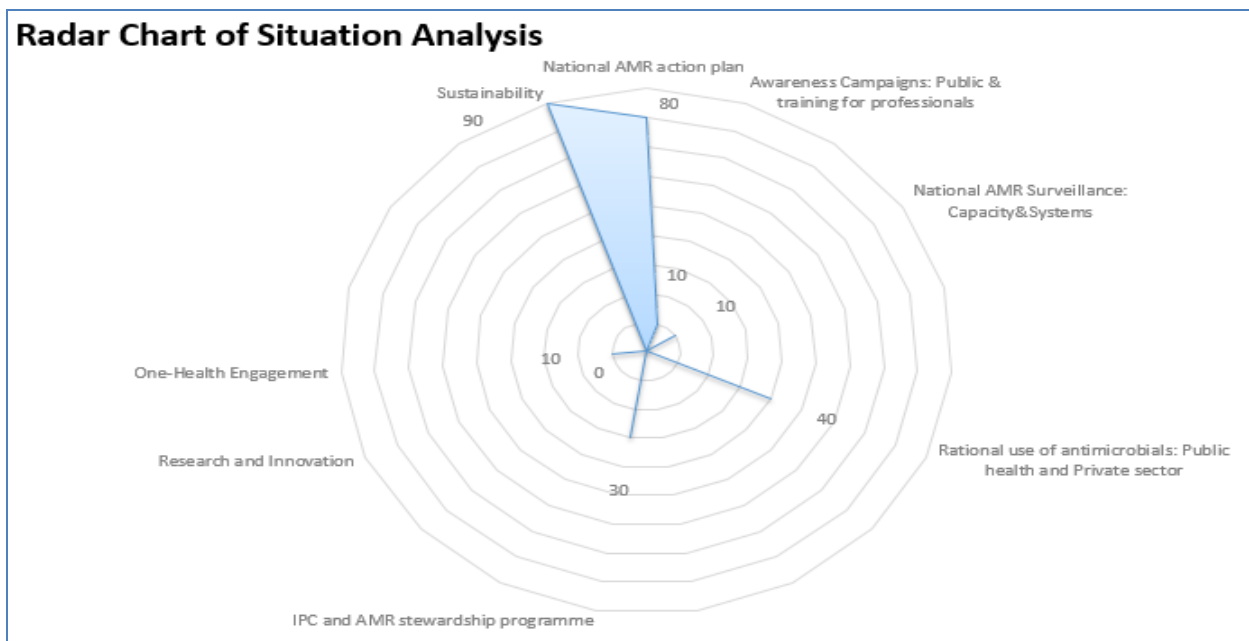


⁴ Workshop Summary Report from 13 to 15 February 2019 consisting of department of Agriculture, Livestock, Biosecurity, Customs – Border Control, Water Resources and Environment

3.0 Summary of Situational Analysis on Antimicrobial Resistance in Nauru

Synthesising information, aligned to the 5 GAP strategic objectives and simplified to eight (8) focus areas, provided the current status of AMR in Nauru, in graphic-**Figure 2** and narrative format. The Secretariat can update and use the radar chart as a tool to monitor progress with a target to reach at least 50% in the 7 of 8 focus areas over the NAP lifetime.

Figure 2 – Radar Chart for current situation of AMR in Nauru



Focus Area 1 - National AMR Action Plan: The MHMS sought technical assistance from WHO for the formulation of an aligned National AMR Plan (NAP) five (5) years after Nauru’s commitment at the World Health Assembly. A whole of society engagement approach was adopted to formulate this flagship document. Cabinet endorsed the Plan as a sign of political will and commitment. Neither AMR systems nor governance structures in place. NAP proposes a term of reference for the multi-sectoral National AMR Committee, reporting directly to the Honourable Minister for Health and Medical Services. The NAP costing and M&E framework will be developed at the onset of the NAP lifetime. TB, HIV, Sexual Transmitted Infections and neglected tropical diseases (NTD) related focus areas are included in the NAP, co-support funding requests to the Western Pacific Multi-Country Global Fund Project and other development partners can be explored.

Focus Area 2 - Awareness Campaigns: Members of Public & training for professionals: Nauru plans to develop a National Strategic Health Communication Plan (NSHCP) on AMR as the reference document to implement, monitor and improve communication-related activities in all sectors to help reduce AMR risks. Anecdotal reports received indicated Intense AMR awareness campaigns were delivered to communities over the last five years. However, there were no tailored and culturally appropriate IEC materials developed for public awareness in order to address limited knowledge on the risks of AMR. Since 2015, intensified AMR related activities were observed during the ‘World Antibiotic Awareness Week (WAAW)’ from 18 – 24 November, but, follow-on AMR related activities has been minimal. There is a need to link the NAP on AMR to the upcoming National Health Strategy: strengthening Water Sanitation and Hygiene (WASH) requirements and Immunization coverage; IPC practices by improving community-based care with both nursing staff mobile clinic visits and fixed community clinics which will greatly boost patient awareness and good personal health compliance.

There were no records on training and professional education on AMR for Human Health workers, tripartite partners and key partners. It is important to improve associations between lower AMR prevalence with the following: higher child immunisation and vaccination program coverage; improved prevention and control of diabetes can reduce risk of contracting TB and community acquired MRSA infections. Strengthen implementation and monitoring of food safety standards to help reduce any future *Salmonella Typhi* outbreaks. Strengthen the provision of structured continuous professional education on AMR concepts, in health, agriculture and environment sectors. It is critical to establish the link between NCDs and CD, specifically diabetes infections as a result of poor glycaemic control, zoonotic transmissions and environmental impacts of AMR. Memorandum of Understanding can be developed and ratified for appropriate AMR entry points with each tripartite partner or other stakeholders to establish good technical and social collaboration to help control AMR in Nauru.

Focus Area 3 - National AMR Surveillance: Capacity & Systems

Surveillance Systems: No national monitoring system for consumption and rational use of antimicrobials in human health, animals and pesticide use in plant production. No National surveillance system for AMR in humans. No capacity for generating data (antibiotic susceptibility testing and accompanying clinical and epidemiological data) and reporting on antibiotic resistance in humans, animals (terrestrial and aquatic) and food (animal and plant origin). No data systemically collected or may not use a standardized approach. Strengthen national coordination and quality management. No priority pathogenic/commensal bacterial species have been identified for surveillance. Need to formulate a technical group to discuss AMR intelligence and utilize to develop country-led responses and research on AMR. Nauru is exploring a suitable and sustainable surveillance system such as WHONET.

Capacity: Tripartite One-Health Approach to strengthen national AMR laboratory network in human, animal health and food safety sectors. No information available about performing AST test and its integration in the national AMR surveillance system. No information available about diagnostic techniques (AST, bacterial isolation and identification protocols) used by laboratories included in the AMR surveillance system. Neither information available on quality management systems nor technical level of data management of the laboratory network. Laboratory capacity strengthening is needed to ensure timely and quality assured results on antimicrobial resistance surveillance to improve prescribing habits. However, stand-alone published AMR scholarly articles voice serious concerns on the rapid increase and spread of nosocomial multidrug resistance microorganisms *Escherichia coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, and *Streptococcus pneumoniae*, followed by *Salmonella species*.

Focus Area 4 – Rational use of antimicrobials: Public health and Private sector: Urgently update Principal Acts governing importation, sale and use of antimicrobials in animal and health sectors. Urgent updating and endorsements of aged editions of National Medicines Policy, Essential Medicines List and Antibiotic Standard Treatment Guidelines during the NAP timeline.⁵ Even though funding was available, neither regular capacity building activities nor monitoring on prescribing of AMs was undertaken during the last strategic period. Capacities to monitor prescribing habits, compliance to and reporting of antibiotics usage urgently needs strengthening. Urgent need to build systems in country, WPRO invited MoH in 2021 to identify a focal point for the Antimicrobial Consumption-AMC/Western Pacific Regional Antimicrobial Consumption Surveillance System (WPRACSS) and awaiting response.

Focus Area 5 - IPC and AMR stewardship programme: Formal IPC Program was reintroduced in April 2019; MHMS appointed a National IPC Committee and work-plan developed, with key activities conducted, inclusive of IPC and Hand Hygiene baseline assessments, findings used as NAP inputs. No national regulatory authority (NRA) in place. NRA can access through WHO Sub-regional platform to improve registration and market authorization; M-supply system in place but strengthen capacities to use system; procurement supply management sustaining stable supply of quality pharmaceuticals through IDA and from pre-qualified Australian suppliers. There is no monitoring of antibiotic consumption and promotion of rational use of medicines to the many contracted expatriate medical professionals. No systematic efforts to improve good health, management and hygiene practices to reduce the use of antimicrobials and

⁵ 2014 to 2015 draft editions have not been endorsed, Pharmacy Department, Stakeholder Presentation, 2019

minimize AMR in animal production (terrestrial and aquatic). Some activities are in place to develop and promote good management and hygiene practices to reduce AMR in food handling and processing.

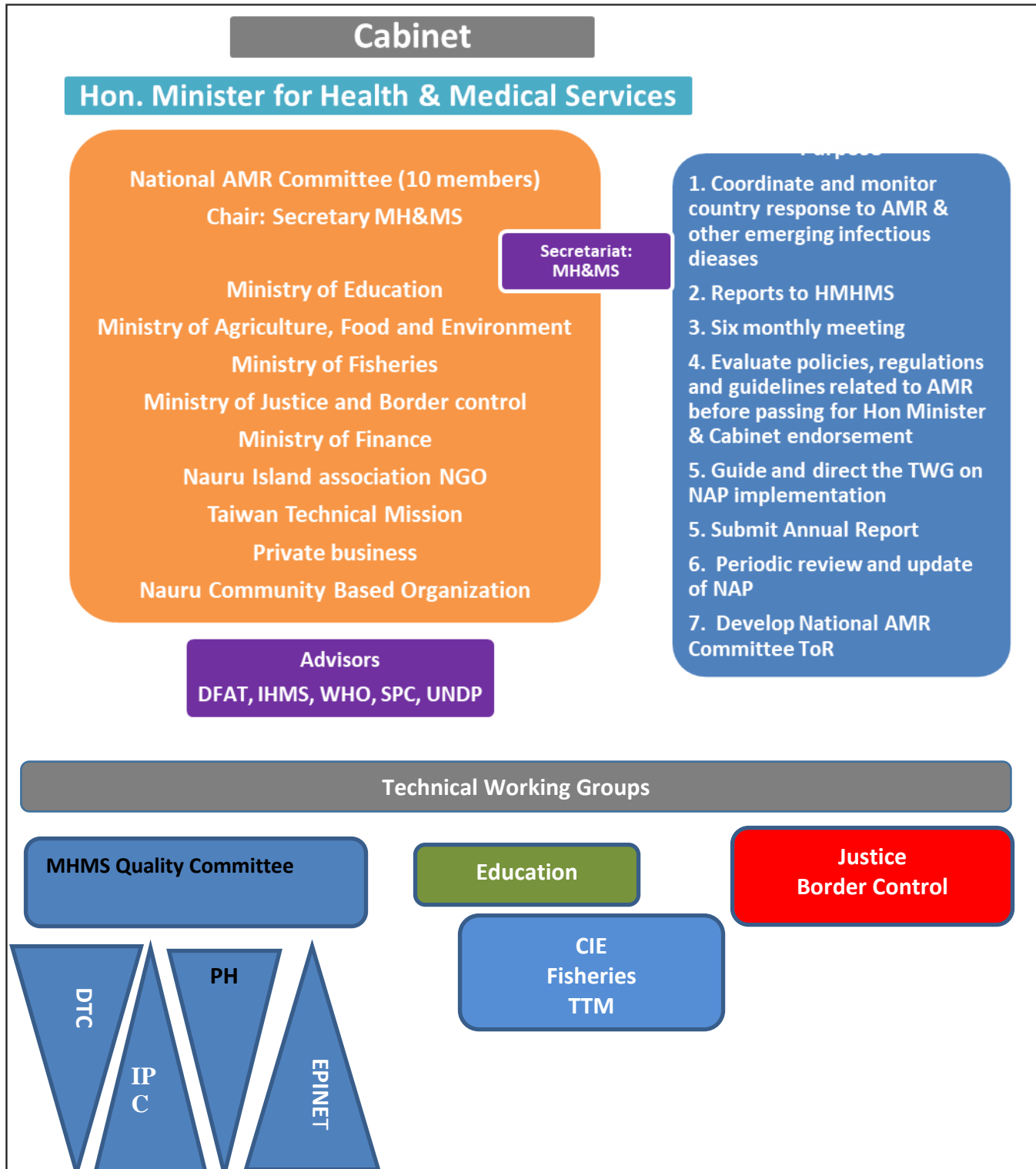
Focus Area 6 - Research and Innovation: Due to limited availability of credible data, there is no country-led associated operational or routine research support capability, to help identify best-fit investments and evidence-based interventions to contain AMR in human, animal and environmental health.

Focus Area 7 – One-Health Engagement: Ad hoc tripartite engagements conducted, with the recognition of the proposed governance structure and signed MoUs, regular structured technical cooperation and activities can be achieved.

Focus Area 8 – Sustainability: In 2014 MoH viewed AMR as a priority agenda, with the new National Action Plan on AMR, high level advocacy to Executives, Development Partners and Cabinet to prioritise and commit an allocated budget for NAP from 2022 to 2025. This can be included in Areas of Interest or Emerging Issues for the upcoming National Health Strategy.

4.0 Governance Framework

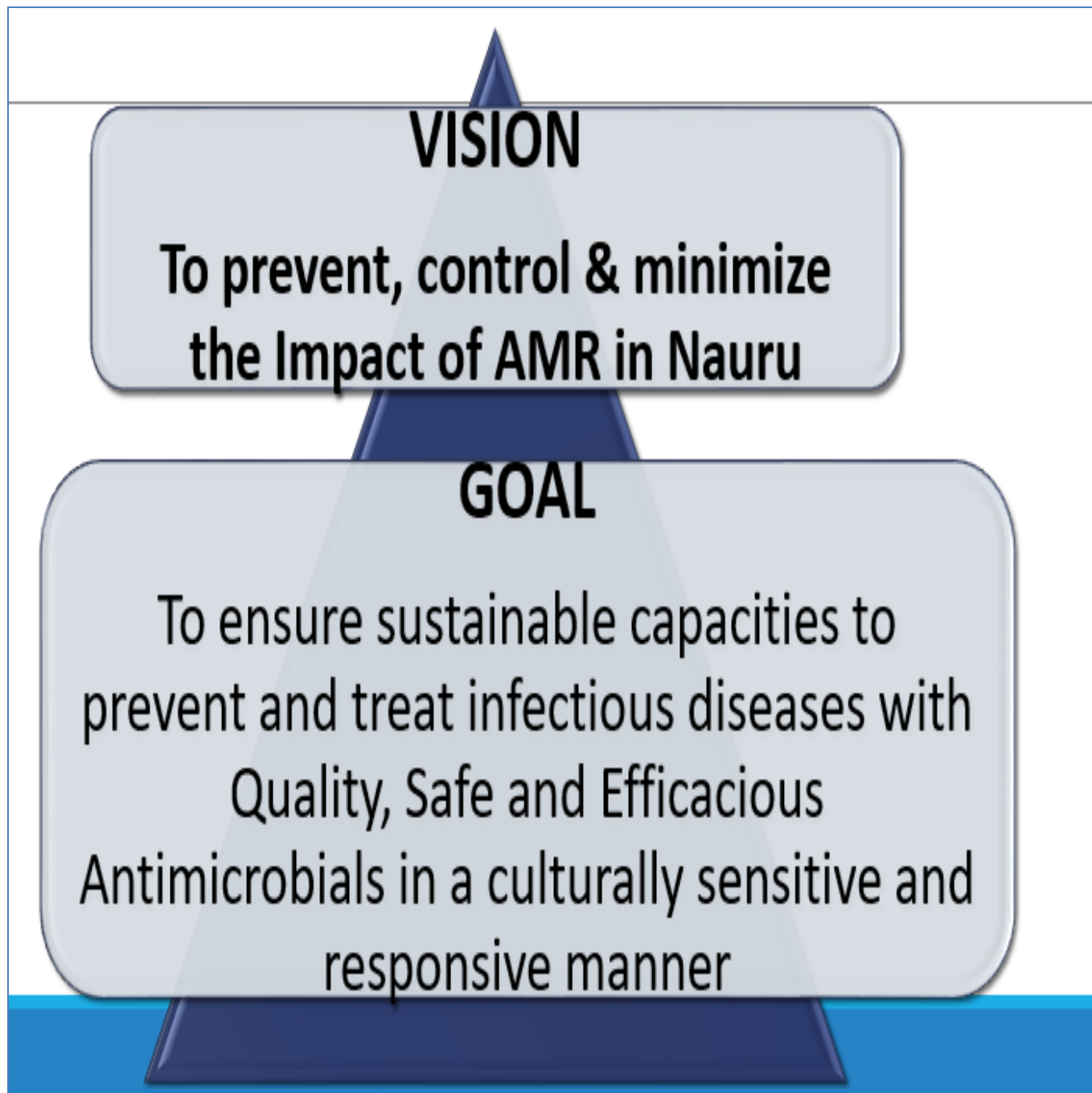
The governance framework for the National AMR Committee is aligned to the established legal framework of the Government of Nauru. The National AMR Committee will report directly to the Minister MHMS.



Legend key –CIE– Ministry of Agriculture, Food & Environment DTC – Drugs Therapeutics Committee
 IPC – Infection Prevention Control PH – Public Health TTM – Taiwan Technical Mission

5.0 Vision, Goal and Strategic Objectives

The National AMR Committee and Secretariat will be guided by the Vision, Goal and **five** strategic objectives to performance manage the first ever National Multi-sectoral AMR Plan from 2021 to 2025. A corresponding Costed and M&E framework will be formulated during the implementation period.



These **five** strategic Objectives are compass points to guide the National AMR Committee to performance manage the aligned National Action Plan within the Republic of Nauru context.



6.0 Republic of Nauru National AMR Operational plan (Years: 2021-2025)

To ratify national, regional and global commitments, 93 activities are linked to the five strategic objectives that need to be sustained by the Government of Nauru and respective development partners. Whole of society engagement is critical and being culturally sensitive to implementing, monitoring and transforming activities as a result of annual review is key to achieving the vision of the Plan.

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
1. Establish and ensure governance, sustainable investment and actions to combat antimicrobial resistance (19 activities)				
1.1 Establish AMR governance structure for finalizing and implementing the national action plan				
1.1.1 Formalize the establishment of a National AMR committee				
1.1.1.1 Formalize the AMR committee in Nauru	Q3 2021	AMR Taskforce	GoN	AMR committee formalized and endorsed by Cabinet
1.1.1.2 Finalize governance framework channel for the AMR committee in Nauru	Q3 2021	AMR Taskforce	GoN	AMR committee structure established
1.1.1.3 Develop and finalize terms of reference for the AMR committee	Q3 2021	AMR Taskforce	GoN	ToR developed
1.1.2 Develop a National Action and Operational Plan for AMR				
1.1.2.1 Finalize and endorse the national action and operational plan	Q3 2021	National AMR committee	GoN/Donor Partners (DP)	National operational plan endorsed by Cabinet
1.1.2.2 Appoint technical working group (TWG) to assist in implementing the AMR plan	Q3 2021	National AMR committee	GoN	TWG established
1.1.3 Develop a budget for implementation of the action plan and identify funding sources				
1.1.3.1 Consultation with key stakeholders for costing the AMR activities outlined in the AMR plan	Q4-2021 to Q1 2022	National AMR committee	WHO	Costing and M&E Framework Plan completed
1.1.3.2 Formal submission of Costed and M&E Framework Plan to Cabinet for endorsement	Q1 – 2022	National AMR committee	GoN	Costing and M&E Framework Plan endorsed
1.1.3.3 Conduct consultation meeting with key partners for the identification of funding sources	Q4, Q1 2022 to 2025	National AMR committee	GoN	Funding sources identified

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
1.1.4 Regular monitoring and evaluation of the national action plan				
1.1.4.1 Develop Costing and M&E Framework Plan for the National AMR Plan through inclusive consultation (link to Act 1.1.3.1)	Q1, 2022	National AMR Committee	WHO (Link to Act 1.1.3.1)	Costing and M&E Framework Plan completed
1.1.4.2 Support 17 quarterly meeting to discuss progress of the NAP implementation, monitoring and reporting	Y1-Y5	National AMR committee	DP/GoN	Meeting minutes disseminated
1.1.4.3 Support annual review meeting for M&E of NAP and update using evidence-based data/information	Y2-Y5	National AMR committee	DP/GoN	Annual review conducted
1.2 Secure political commitment on the implementation of the National Action Plan				
1.2.1 Establish a high-level commitment in the national level				
1.2.1.1 Develop and endorse memorandum of understanding (MoU) between sectors as identified by government	Q4-2021	National AMR committee	GoN	MoU signed by different sectors
1.3 Ensure sustainable investment in combating AMR				
1.3.1 Create an enabling environment for access to effective antimicrobials (e.g., infrastructure, roads, supply chain)				
1.3.1.1 Strengthen and enforce policy and Act/Regulations to ensure the availability and wise use of quality antimicrobials for human and animal health	Ongoing	National AMR committee	GoN/DP	Policy and legislation updated
1.3.1.2 Politically advocate to Cabinet for a dedicated annual budget in the new National Health Strategy to support the implementation of NAP	Ongoing	National AMR committee	GoN/DP	Submission passed by cabinet
1.3.2 Invest in appropriate human resources and infrastructure to ensure sustainable implementation of the national action plan				
1.3.2.1 Support the recruitment and appointment for one dedicated staff as National AMR Coordinator and provide secretariat support to the National AMR Committee, focal lead for NAP implementation	Q4-2021 and ongoing	National AMR committee	GoN/DP	National AMR Coordinator recruited (and champions identified and endorsed)
1.3.2.2 Establish position of a focal point for AMR to support National AMR committee coordinating the implementation of AMR plan (and identify AMR champions in each sector)	Q4-2021 & ongoing	National AMR committee	Donor Partners	AMR focal point appointed
1.3.2.3 Support office and ICT requirements for National AMR Coordinator	Q4, 2021 & ongoing	National AMR committee	GoN/DPs	Office & ICT requirements supported
1.3.2.4 Conduct capacity assessment on RoN Hospital to develop capacity to prevent, control and respond to AMR	Q1-Q2 2022	National AMR committee	DP	RoN Hospital assessed

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
1.3.2.5 Develop human resource and training plan for staff to sustain the implementation of AMR plan	Q4, 2021-Q1, 2022	National AMR committee		Human resource and training plan developed and endorsed
2. Improve awareness and understanding of antimicrobial resistance across all institutions, sectors and communities (10 activities)				
2.1 Promote information sharing on the situation of AMR and use of antimicrobials across institutions, sectors and communities				
2.1.1 Develop awareness raising materials and conduct awareness activities				
2.1.1.1 Develop a strategic health communication plan on AMR	2022	HP unit	DP	NSHCP endorsed
2.1.1.2 Develop tailored and culturally appropriate IEC materials on AMR for the general public and policy makers	Ongoing	HP unit	GoN/DP	IEC materials printed
2.1.1.3 Support the annual awareness campaign to celebrate World Antibiotic Awareness Week (WAAW) November each year	Annually (November)	HP unit, Pharmacy	WHO, FAO	Awareness week campaigns conducted annually
2.1.1.4 Conduct regular AMR advocacy and awareness raising activities using all means of communication/ mass media for general public, human health and animal health sector	Ongoing	HP unit, TTM	GoN/WHO/FAO	3 awareness raising communication conducted annually
2.1.1.5 Engage & train community leaders, NGO's , Civil societies, churches, sports groups to raise awareness on AMR	Ongoing	PH team	GoN/WHO/FAO	3 training session conducted/annum
2.1.2 Promote effective sanitation and hand hygiene in Community Settings				
2.1.2.1 Participate in the world hand hygiene day (5 May)	Q2/yr.	PH team, IPC	WHO	Hand hygiene day celebrated
2.1.2.2 Develop promotional materials to raise awareness on hand hygiene and effective sanitation in the community	Q1 2022	HP team, IPC	WHO	IEC materials printed and disseminated
2.1.3 Develop an educational programme for schools (all levels) on AMR and rational use with key targeted messages				
2.1.3.1 Revise and update the Education curriculum to capture AMR, basic sanitation and hand hygiene awareness raising in all schools	Q4 2019	HPS committee	GoN	Curriculum revised and integrated
2.2 Raise awareness on AMR to health-care workers and livestock officers & para-veterinarians				
2.2.1 Include AMR as core component of professional education, training for health-care workers, livestock officers & para-veterinarians				
2.2.1.1 Develop training manual for ongoing continuous professional development on AMR for health-care workers, livestock officers & para-veterinarian	Quarterly	ETU, Department of CIE, TTM	WHO/FAO	90 % coverage attained for trained technical staff
2.2.1.2 Enrolling health-care workers and livestock officers & para-veterinarian on any AMR online course offered on POLHN or other institutions (mandatory registration for annual competency accreditation/licensing)	Ongoing	ETU, Department of CIE, TTM	WHO,FAO	50% of identified technical staff enrolled on accredited online AMR course

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
3. Strengthen surveillance, diagnostic capacity and research on AMR (17 activities)				
3.1 Develop an AMR surveillance system in the main laboratory				
3.1.1 Strengthen laboratory staff capacity for training on microbiology and quality antimicrobial susceptibility testing				
3.1.1.1 Ensure the appropriate number of laboratory staffs in microbiology unit				
3.1.1.2 Develop a detail antibiogram for RoN Hospital Laboratory	Ongoing	National AMR committee	WHO/GoN	National Antibiogram data available
3.1.1.3 Train and retrain laboratory staff to conduct microbiology testing and analysis of antibiogram on a regular basis	Ongoing	National AMR committee	WHO/Other DPs	All laboratory staff trained
3.1.1.4 Train and retrain laboratory staff in conducting external quality assessment (EQAS) on AMR	Ongoing	National AMR committee	WHO Other DPs	All laboratory staff re/trained
3.1.1.5 (Re)Train laboratory staff in using the microbiology equipment on AMR	Ongoing	National AMR committee	WHO Other DPs	All laboratory staff re/trained
3.1.2 Improve infrastructure for AMR surveillance				
3.1.2.1 Equip the national laboratory to conduct and record antibiotic testing	Y2	National AMR committee	DP	All laboratories conducting AST
3.1.2.2 Ensure supply stability and access to quality prescribed laboratory consumables and reagents	Ongoing	MH&MS & Laboratory	GoN	100% availability of supplies
3.1.3 Strengthen laboratory policy, standards and information system				
3.1.3.1 Develop new and update current standard operating procedures for antibiotic testing and quality management system in national laboratories	Annually	National AMR committee	GoN	SOP's updated and endorsed
3.1.3.2 Conduct annual review of QMS and EQA programmes in Ron Hospital Laboratory that conduct antibiotic susceptibility testing (AST)	Annually	National AMR committee	WHO/GoN	EQA & QMS conducted annually
3.1.3.4 Install database and install information system to track AMR in human health and animal health (e.g., WHONET)	Y2 to Y3	National AMR committee, Department of CIE, TTM	GoN/WHO/FAO	AMR Database developed and information system installed
3.2 Strengthen food safety capacity to combat AMR				
3.2.1 Promote random and regular testing on meat and other food product imports for AMR pathogens and antibiotic residues				
3.2.1.1 Develop fit-for-purpose systems for random sample collection and testing for AMR and antibiotic residues	Ongoing	Department of CIE, TTM	GoN/FAO	2 samples randomly selected and tested per year
3.3 Strengthen research and information sharing on AMR				
3.3.1 Promote collaborative research projects on AMR in human and animal health and the environment				

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
3.3.1.1 Conduct annual AMR symposium for all key stakeholders	Annually	National AMR committee	GoN/DPs	Annual conference held
3.3.1.2 Conduct antimicrobial consumption survey as prescribed	Annually	National AMR committee	GoN/WHO	AMC survey completed and report submitted
3.3.1.3 Conduct AMR perception survey for public, health-care workers and livestock officers & para-veterinarians	Y2 and Y5	National AMR committee, Department of CIE, TTM	GoN/WHO/FAO	Perception survey completed and report submitted
3.3.1.4 Foster formal relationship with other research institutions and collaborating centre for AMR	Ongoing	National AMR committee	GoN/WHO/FAO	MoU in place
3.3.1.5 Review a template and mechanism for reporting AMR related activities in Nauru	Y2	National AMR committee	GoN	AMR standard template and mechanism in place

4. Reducing incidence of AMR through effective infection prevention and control measures, food safety and hygiene (27 activities)

4.1 Establish a hospital infection prevention and control programme

4.1.1 Endorse the hospital infection control policy and formation of committee

4.1.1.1 Develop ToR of the infection prevention and control committee	Q4 2021	IPC committee		ToR finalized and endorsed
4.1.1.2 Print/Upload on MH&MS website and disseminate the National Infection Prevention and Control Policy to key stakeholders for implementation	Q1, 2022	IPC committee	GoN/DP	20 copies printed for distribution
4.1.1.3 Conduct (re) training on IPC Policy and guidelines targeting patients, health care workers and health administrators, livestock and para-veterinarians	Ongoing	IPC committee, Department of CIE, TTM	GoN/DPs	3 trainings per year
4.1.1.4 Include IPC in induction program for health care workers	Ongoing	IPC committee	GoN/DP	HR Policy guideline endorsed

4.1.2 Strengthen capacity of infection prevention and control staff and infrastructure to support disease outbreak surveillance

4.1.2.1 Regularise a National IPC officer position (to work with National AMR Coordinator) to coordinate, implement and monitor IPC, food safety and hygiene related activities in Nauru		IPC committee	GoN/DP	National IPC Officer recruited
4.1.2.2 Support office space and ICT requirements for National IPC Officer	Q1, 2022 Ongoing	IPC committee	GoN/DP	Office & ICT Requirements supported
4.1.2.3 Ensure supply stability and access to IPC consumables and PPEs for health care workers	Ongoing	IPC committee	GoN/DP	100% availability of supplies and PPEs
4.1.2.4 Enrol health-care workers on infection prevention and control online	Ongoing	IPC committee	GoN/DP	Participants completed online

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
course offered on POLHN or other institutions for annual practicing licenses				course and receive certificates
4.1.2.5 Conduct regular infection prevention and control assessment of all health facilities	Quarterly	IPC committee	GoN/DP	All facilities achieved >80% level of compliance
4.1.3 Disposal of expired drugs and non-registered drugs and medical waste				
4.1.3.1 Assess status of medical waste management system including disposal of antimicrobials in Nauru	Ongoing	Environmental health	GoN	Assessment report submitted
4.1.3.2 Develop guidelines on waste management of expired antibiotics (including veterinary medicines)	Q1, 2022	National AMR committee, Department of CIE, TTM	GoN	Guidelines endorsed
4.1.3.3 Conduct environment impact assessment on disposal of antimicrobials	Y2	Environmental health	GoN/DP	Assessment report submitted
4.2 Implement the Water, Sanitation and Hygiene (WASH) program to promote safe water and hygiene practices				
4.2.1 Strengthen the WASH program in communities and schools				
4.2.1.1 Develop a WASH program and guidelines for communities and schools	Y2	Environmental Health	GoN/DP	WASH program and guidelines endorsed
4.2.1.2 Implement and monitor WASH program in communities and schools	Y2-Y5	Environmental health	GoN/DP	WASH program implemented
4.2.1.3 Conduct awareness training on WASH program in communities and schools	Quarterly	Environmental health, HP Unit	GoN/DP	3 trainings per year
4.3 Promote good infection control and biosecurity practices in animal husbandry				
4.3.1 Strengthen infection prevention and control in animal husbandry				
4.3.1.1 Develop IPC policy specific for animal farms and clinics	Y2	Department of CIE, TTM	GoN/DP	IPC policy endorsed
4.3.1.2 Conduct quarterly (re)training on infection prevention and control policy to farmers and livestock officers and para-veterinarians	Ongoing	Department of CIE, TTM	GoN/DP	3 trainings per year
4.3.1.3 Print/upload and distribute infection prevention and control policy to all key stakeholders	Y2	Department of CIE, TTM	GoN/DP	100 copies printed for distribution
4.3.2 Establish the specific policy on withdrawal period for farm animals to ensure food safety				
4.3.2.1 Develop the policy on withdrawal period of antibiotic use for farm animals	Y2	Department of CIE, TTM	GoN/DP	Policy endorsed
4.3.2.2 Convene an annual workshop for farmers to raise awareness on	Annually	Department of CIE, TTM	GoN/DP	Workshop conducted

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
withdrawal period				
4.4 Implement Good Hygienic Practices (GHP) in food handling and processing				
4.4.1 Establish GHP and HACCP program				
4.4.1.1 Conduct wide consultation on GHP program with all stakeholders	Q1, 2022	Environmental health	GoN/DP	One consultation meeting conducted
4.4.1.2 Develop a Good Hygiene Practices guidelines for Nauru	Q1, 2022	Environmental health	GoN/DP	GHP & HACCP program and guidelines endorsed
4.4.1.3 Implement a nationwide Good Hygiene Practices program	Y2-Y5	Environmental health	GoN/DP	GHP & HACCP program implemented
4.4.1.4 Conduct awareness training on GHP program in communities	Quarterly	Environmental health	GoN/DP	3 trainings per year
4.5 Strengthen vaccination program in human and animal sectors				
4.5.1 Implement vaccination program in human and animal				
4.5.1.1 Conduct awareness to members of public/communities on vaccination program	Ongoing	HP unit, Department of CIE, TTM	GoN/DP	3 awareness sessions per year
4.6 Strengthen infection control program for MDR/XDR-TB and HIV				
4.6.1 Strengthen TB and HIV program in health care facilities and community				
4.6.1.1 Ensure supply stability and access to PPEs in health-care facilities	Ongoing	National AMR committee MHMS	GoN/DP	100% availability of PPE's
4.6.1.2 Deliver regular IPC (re)training to TB and HIV care teams and raise IPC awareness specific for TB and HIV care in communities using National IPC training manual and Policy	Ongoing	National AMR committee MHMS	GoN/DP	All TB/HIV team members trained and all community members sensitised
5. Optimize the use of antimicrobial medicines in human and animal health (20 activities)				
5.1 Strengthen regulations to promote responsible use of antimicrobials				
5.1.1 Enforce the use of prescription on antimicrobials in human and animal sector				
5.1.1.1 Review existing National Medicine Policy (to include regulatory requirements - market authorization and registration) and legislation to encompass the prescribing and use of antimicrobials in both human and animal health	Y2	National AMR committee, Department of CIE, TTM	GoN/DP	National Medicines Policy & Legislation updated and endorsed
5.1.1.2 Develop the medicine legislation to regulate antimicrobials	Y2	MH&MS	GoN/DP	Regulations enforced

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
5.1.1.3 Conduct awareness on medicine policy and legislation to key health workers and stakeholders in Nauru	Ongoing	National AMR committee	GoN/DP	Awareness conducted
5.1.1.4 Print/upload and disseminate the updated medicine policy and legislation to key stakeholders	Y2	National AMR committee	GoN/DP	Legislation printed/uploaded and distributed
5.1.1.5 Conduct quarterly inspection on clinics and retail supermarket on the counter sales of antimicrobials	Quarterly	National AMR committee	GoN/DP	Inspection conducted and report submitted
5.1.2 Strengthen market authorization and registration of antimicrobial				
5.1.2.1 Develop guideline/SoPs on market authorization and registration of antimicrobials that are imported to the country	Q1, 2022	National AMR committee	GoN/DP	Prequalification policy and guideline updated and endorsed
5.1.2.2 Conduct training on product assessment and physical verifications to pharmacy inspectors, customs, para-veterinarians in Nauru	Y2-Y5	National AMR committee, Department of CIE, TTM	GoN/DP	2 trainings conducted
5.1.2.3 Build relationship with other stringent regulatory authority and using any sub regional platform to access information on quality of antimicrobials	Ongoing	National AMR committee	GoN/DP	MoU in place
5.2 Establish and develop national guidelines and programs to control the use of antimicrobials				
5.2.1 Develop and finalized antibiotic guidelines based on country antibiogram for human and animal use				
5.2.1.1 Develop a new antimicrobial standard treatment guideline for human health use	Y2	National AMR committee	GoN/WHO	Guidelines published/uploaded
5.2.1.2 Develop a national antimicrobial guideline for animal health use	Y2	Department of CIE, TTM	GoN/DP	Guidelines published/uploaded
5.2.1.3 Review and update the National Essential Medicine List	Y2	National AMR committee	GoN/DP	EML updated, published/uploaded
5.2.1.4 Conduct (re) training on antimicrobial standard treatment guideline and rational prescribing to health workers and other key stakeholders in Nauru	Ongoing	National AMR committee	GoN/DP	1 training per year
5.2.2 Support the role of Medicine Therapeutic Committee in hospital				
5.2.2.1 Review the NMTC terms of reference to include AMR related policy directives	Y2	National AMR committee	GoN/DP	ToR updated and endorsed

SUB-ACTIVITY	TIMELINE	IMPLEMENTER	SOURCE OF FUNDING	INDICATOR
5.2.3 Strengthen border control for detection of imported antimicrobials				
5.2.3.1 Review Border Control legislation to encompass the declaration of all imported antimicrobials for health and animal use	Y2	Department of Justice & Border control	GoN/DP	Endorsed Boarder control legislation in use
5.2.3.2 Develop policy to control and guide the use of antimicrobials on patients sent for overseas treatment including overseas doctors from Overseas Visiting Medical Teams	Y2	National AMR committee	GoN/DP	Policy finalized and endorsed
5.2.4 Strengthen Antimicrobial Stewardship Program				
5.2.4.1 Develop and implement basic antimicrobial stewardship (AMS) program in the RoN Hospital	Y2 & Ongoing	National AMR committee	GoN/WHO	AMS program developed and implemented
5.3 Strengthen procurement and supply of antimicrobials				
5.3.1 Ensure the availability and accessibility of quality antimicrobials				
5.3.1.1 Conduct in depth assessment of the Procurement & Supply Chain Management (PSCM) of Medicines in Nauru	Y2	National AMR committee	GoN/WHO	Assessment report completed
5.3.1.2 Develop a PSCM strategies of AMs in both human and animal sector	Y2	Pharmacy, Department of CIE, TTM	GoN/WHO	Procurement plan developed
5.3.1.3 Develop/Update the PSCM regulation and Policy for medicines	Y2	National AMR committee	GoN/WHO	Procurement regulation/ and policies endorsed
5.4 Strengthen the capacity of Pharmacovigilance system in human health				
5.4.1 Strengthen the monitoring system to detect, assess, prevent adverse effects of antimicrobials				
5.4.1.1 Develop and use Pharmacovigilance of antimicrobials as prescribed by WHO	Y2-Y5	National AMR committee	GoN/DP	The database and guideline on Pharmacovigilance system developed

6.0 Implementation Framework

6.1 Strategic Operational Plan

Upon the adoption of the endorsed Republic of Nauru National Action Plan on Antimicrobial Resistance, the National AMR Committee will develop an annual Operational Plan over the five years. This will include detail activities linked to indicators and targets with responsibilities to help implement the National Action Plan on AMR.

6.2 Costing and M&E Framework

The National AMR Committee will develop a Costing and M&E Framework to assist in submitting for annual budgetary requirements linked to harmonise results-based M&E Framework.

6.3 Review and Evaluation

The Republic of Nauru National Action Plan on Antimicrobial Resistance will be reviewed every three years, or more frequently if necessary.
